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<110> Vlaams Interuniversitair Instituut voor Biotechnology

<120> SMAD-INTERACTING POLYPEPTIDES AND THEIR USE

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<140> 09/449,285

<141> 1999-11-24

<150> PCT/EP98/03193

<151> 1998-05-28

<150> 97201645.5

<151> 1997-06-02

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<170> PatentIn version 3.0

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acccccatct gtccagaggg ttggcaaaact actctgtctt ccctgaaagt ggtccttccc 1080
ctgtttaggc tgctcaaca aggctagatg gggctccccg ggagtgccag ggcagcagca 1140
aaagtgcaat aggtctggagg acccagccgt tcctacaagg acattgcatg gcaggagcct 1200
tggcatcatg gggcatgaag tgtgcttaaa cagttaaaag gtcccagttt ccaccttct 1260
ctggcccagt aggatcccca atctgactct ttcaaggctc agacattcct ggtgacccaa 1320
tgttgtggac tgatgaggca cctgagcagt ctggctgcc aacttgggc ctcgcctcca 1380
cccaacactg gaactccagt actcccga 1409

<210> 6

<211> 960

<212> DNA

<213> Mus musculus

<400> 6
 ggattttactg ctcagccagc tacttaccat cataacagca ctaccacctg gactggaagt 60
 aggactgcac catacacacc taatttgccct caccacccaaa acggccatct tcagcaccac 120
 ccgcctatgc cgccccatcc tggacattac tggccagttc acaatgagct tgcattccag 180
 cctcccattt ccaatcatcc tgctcctgag tactgggtgct ccattgctta ctttgaaatg 240
 gacgttcagg taggagagac gtttaaggtc ccttcaagtt gccctgttgt gactgtggat 300
 ggctatgtgg atccttcggg aggagatcgc ttttgcttgg gtcaactctc caatgtccac 360
 aggacagaag cgattgagag agcgagggtg cacataggca aaggagtgc gttggaatgt 420
 aaaggtgaag gtgacgtttg ggtcaggtgc cttagtgacc acgcggtctt tgtacagagt 480
 tactacctgg acagagaagc tggccgagca cctggcgacg ctgttcataa gatctacca 540
 agcgcgtata taaaggctct tgatctgcgg cagtgtcacc ggagatgca gcaacaggcg 600
 gccactgcgc aagctgcagc tgctgctcag gcggcgccg tggcagggaa catccctggc 660
 cctgggtccg tgggtggaat agccccagcc atcagtctgt ctgctgctgc tggcatcggt 720
 gtggatgacc tccggcgatt gtgcattctc aggatgagct ttgtgaaggg ctggggccca 780
 gactaccca ggcagagcat caaggaaacc ccgtgctgga ttgagattca ccttcaccga 840
 gctctgcagc tcttgatga agtctgcac accatgccc ttgcggaccc acagccttta 900
 gactgagatc tcacaccagc gacgcctaa ccatttcag gatggtggac taatgaaata 960

<210> 7

<211> 476

<212> DNA

<213> Mus musculus

<220>

<221> misc_feature

<222> (262)..(476)

<223> n can be any nucleotide

<400> 7
 tttttttttt tccacttcgt atagtgactc agttttatct acgctagtaa ctaggtagaa 60
 agtatacatg tgtgtctgtg gtacagtcaa tgtgtcttaa ctctccact tcaatctcta 120
 caaagtcacc gccaaagtga caaggatggc aaacacaggg cttataacca aaaggtataa 180
 aaaagtctgc agtcttgccc taagatacaa aaactgaatt ttaaacaatg tcaaaacata 240

catgatTTTta acaagtatat gnaaaagaat cacacatcaa atcaagtaca aaaatatcca	300
aaccacctgt tacaactgca ctgtttccat tatcctgcac agtattttaac ataaaaattt	360
agcagtttcc aaaaatattc attaatccac ttgaagttac tgccccntgc aaaacagtga	420
aacaccaggc aaaccaanct gcctttaatt nttttinnacc aaatcntcct ccnna	476

<210> 8

<211> 850

<212> DNA

<213> Mus musculus

<400> 8

gacagaaccg gttcgcaccg acagacggac agaggaccag acagccacta aggagcgctt	60
actgcccccc tccgggcccc tgccccgaac tccagcccca gcgcctgtta ctgccccaga	120
tacagcaaga tgcgcggtcc tggcagcgag acacgggcga gcactgtccc ccggtccccg	180
agccttgccc cctagcgcgc agcgtgctg cctgcatca gggagggccg cggagacccc	240
agcctcagtt ggcgcaggag ccctgcgggt ggggcctgcc cagcccagcc aggcgcgcca	300
gcccaccatg ctctcctgt cgccgcgcag cgcgtggtc tccgtctatt gcccgcagat	360
ctttctcctt ctgtccacgg cagttactac attgtcatcc gtggtggccc tgggagccaa	420
catcatctgc aacaagattc ctggcctggc cccacggcag cgtgccatct gccagagccg	480
acccgatgcc atcattgtga tcggggaggg ggcgcagatg ggcatcgacg agtgccagca	540
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ggcgcagtgt gtcaccgtg cctgcagcca gggcaatctg agcaattgtg gctgtgaccg	720
ggagaagcaa ggctactaca accaggcgga aggttggaag tgggggggct gctcagcgga	780
cgtccgctac ggcatcgact tttctcgtcg ctttgtggat gcccgtaga tcaaaaagaa	840
cgccggatcc	850

<210> 9

<211> 475

<212> DNA

<213> Mus musculus

<220>

<221> misc_feature

<222> (446)..(446)

<223> n can be any nucleotide

<400> 9

agacactggtt gtattcagat tatttcttag tggctggctt ttgattctag acagagattc	60
ttaaagtcct tttaaaaaag tggatcagga atcctgttat gggccttgat tgttccagac	120
attagaagta aatatatttg atgaaggaaa tcttgaaaaa atactgacta gataaaaatt	180
gtaagccaag ctttctgact gaaaaatgct acctagccac agatcattgc tgttatttgg	240
ttcattgcat gagtgtgtat gtgtgtgtat atatgtatac acatatatat gtgtgtgtgt	300
gtgtatgtgt acacacacat atatgtgggt tttgggggggt atggataaga tggtgctatg	360
aaaataatth gtctcttgtt ttaattaatg aagcttctgt catgccaagt aatctttaag	420
ggagaatcag aacttttcat taaaantcat aagggaaaca gaatttgtac ggggtg	475

<210> 10

<211> 1537

<212> DNA

<213> Mus musculus

<400> 10

agcggagttt cagtctgcgg acacgcgtgg agcccttgcc cgggcctccg tgggtctgag	60
gcgctgcgag ccctgggtaa ccacggcctc gagctgctgt cctcaccaag atcctccaat	120
tctgaaccaa gaacaaaaaa atgtttcagc ttcgtgcatt tcaaagaagg cattaactag	180
agcccagttt ggcggacaag ttcttcattc aaaagagagt cctgttagga tcaactgtgtc	240
caaaaagaac acatttgttt tgggagggcat tgattgtact tatgaaaagt ttgaaaatac	300
tgatgttaac accattagtt ctctttgtgt tcctattaag aatcatagcc aatctattac	360
ttctgataat gatgtgacaa cagaaaggac tgcaaaagag gatattacag aaccaaata	420
agagatgatg tccagaagaa ctattcttca agatcccata aagaatacat ctaaaattaa	480
acgttcaagt ccaagaccta atttaacact atctggccgg tctcaaagaa aatgtacaaa	540
gcttgaaact gttgtaaaag aagtaaaaaa atatcaggca gtccacctac aggaatggat	600
gattaaagtc atcaataata atactgctat atgtgtagaa ggaaagctgg tagatatgac	660
tgatgtttat tggcatagca atgtaattat agagcggatt aaacacaatg aacttaggac	720
cttatcaggc aacatttata tcttaaaagg attgatagac tcgggtctcca tgaaagaagc	780
aggatatccc tgttatctca caagaaaatt tatgttttga tttcccaca actggaagga	840

```

acacattgat aaatttctag aacaattaag ggctgaaaaa aagaacaaga ccagacagga      900
aacagcaaga gtccaagaaa aacaaaaaatc aaaaaaaaaa gatgcagaag ataaagaaac      960
ttatgtcctc caaaaggcca gcatcacgta tgaccttaat gataatagct tagagagaac     1020
tgaagtaccc actgatccct tgaactcact ggaacagcct acctccggca aagaaagaag     1080
acacccgctt ctcagtcaga agagagctta tgttttaata acaccactta gaaacaaaaa     1140
gttgatagag caaagatgta tagactacag tctctctatt gaaggaatat cggacttttt     1200
caaagcaaag catcaagaag aaagtgactc agatatacat ggaactccaa gttctaccag     1260
taagtctcaa gagacctttg aacatagagt gggatttgaa ggcaatacca aggaggactg     1320
caatgaatgt gacataatca ctgccagaca tattcagata ccttgcccga aaagtaaaca     1380
aatgctcacc aatgatttta tgaaaaagaa caagttgccc tcaaaactgc agaaaactga     1440
aaatcaaata ggtgtatcac agtattgccg gtcctcatca catttgtcaa gtgaagagaa     1500
tgaagtagaa attaaaagta gaaccagagg atcccaa                                1537

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<210> 11

<211> 477

<212> DNA

<213> Mus musculus

<220>

<221> misc_feature

<222> (261)..(448)

<223> n can be any nucleotide

<400> 11

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gagtaaactc tccttccgag cgcgggcgct ggacgccgcc aaaccgctgc ccatctaccg      60
cggcaaggac atgcctgata tcaacgactg cgtctccatc aaccggggccg tgccccagat     120
gccacccggg atggagaagg aggaggaatc ggaacatcac ctacagcgag ctatttcagc     180
gcagcaagta tttagagaaa aaaaagagag catggtcatt ccagttcctg aggcagagag     240
caacgtcaac tattacaatc ngcttgatac aaggggagtt caaacagccc aagcagttca     300
tncatattca gccttttaac ctagacaacg agcaaccaga ttatgatatg gattcagaag     360
atgagacatt attaaataga cttaacagaa aaatggaaat taaacctttg caatttgaaa     420
ttatgattga cagacttgaa aaagccantt ctaccagctt gtacacttca agaagca        477

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<210> 12

<211> 572

<212> DNA

<213> Mus musculus

<220>

<221> misc_feature

<222> (505)..(572)

<223> n can be any nucleotide

<400> 12

tctgggttcta cttttaattt ctacttcatt ctcttcactt gacaaatgtg atgaggaccg	60
gcaatactgt gatacaccta tttgattttc agttttctgc agttttgagg gcaacttggt	120
ctttttcata aaatcattgg tgagcatttg tttacttttc gggcaaggta tctgaatatg	180
tctggcagtg attatgtcac attcattgca gtcttccttg gtattgcctt caaatcccac	240
tctatgttca aagggtctctt gagacttact ggtagaactt ggagttccat gtatatctga	300
gtcactttct tcttgatgct ttgctttgaa aaatccgata ttccttcaat agagagactg	360
tagtctatac atctttgctc tatcaacttt ttgtttctaa gtggtgttat taaaacataa	420
gctctcttct gactgagaag cgggtgtctt ctttctttgc cggaggtagc tgttccagtg	480
attcaaggga tcaatgggta ctcantctct ctaanctata tcataaggtc tacttaatgc	540
tggcttttgg aagantaatt ctttatctct gn	572

<210> 13

<211> 579

<212> DNA

<213> Mus musculus

<220>

<221> misc_feature

<222> (315)..(579)

<223> n can be any nucleotide

<400> 13

ctgctgtgag gaatgctggg attgttgttt ctgatgaagc tgcgcaagtt gctgcctttg	60
catttgaact agctgctggt gatgtgtctg aaactgctct tctgtgatgc cccctgttac	120
tgatatgccg ttcttgctgg tgttcaataa agctacggat gctgcagaaa ctcttttact	180

gctcacagtc tgccttggtt ttcttgaggt acattcttca ctatcaatgt cctgtacatt 240
tagtagcctt ggctggaaac actgtagtcg acatgatctg atattgctta atatttcaga 300
aagagacagt ctatnttcac aaggtttact gggaagcatt ggtccgagag aaattagaag 360
aaaatctata gtttgggaag acttgaaaac ccgttcagca tctcanggtc tatctgtttc 420
aggacggggt catgttctgt ggatatccgt ccattatgaa cctgccactc tgccattccc 480
ctccttgcaa tcctatacat cttcttggac tgtaatttcg taaganatgc ttataactcaa 540
cttatccaat ctgccactct gaatttcnac atatggtan 579

<210> 14

<211> 403

<212> DNA

<213> Mus musculus

<220>

<221> misc_feature

<222> (400)..(400)

<223> n can be any nucleotide

<400> 14

ggaaagacaa agatgcagga tatagtactt ggaacaggct ttttaagtat tcatacctaaa 60
aatgaggctg agcacataga aaatggggct aagtgtccga atttggagtc cataaataag 120
gtaaatggtc tttgtgagga cactgcaccg tctcctggta gggttgaacc acagaaggcc 180
agttcttctg ctgacgtggg catttctaaa agcacggaag atctatctcc tcagagaagt 240
ggtccaactg gagctgttgt gaaatctcat agtataacta acatggagac tggaggctta 300
aaaatctatg acattcttgg tgatgatggc cctcagccgc caagttgcag cagttaaaat 360
cgcatctgct gtggatgggg aagaacatat cagaagcaan tct 403

<210> 15

<211> 555

<212> DNA

<213> Mus musculus

<220>

<221> misc_feature

<222> (382)..(555)

<223> n can be any nucleotide

<400> 15

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tttttttttt tttttttttt gacagttttg aaattatatt tattaatgct ttattatacg      60
tattgtattc tatttgagcc aagggaagg agaaccac tcaagtgaga taacaaactt      120
gctgtctttt acaaaattta atcagaactg acaatgttat ggtagttct taattcctga      180
gaatttgaac atcattaagt tttctgtgaa ttacaacaa aacactcatg ttaatatatta      240
aattacaata tttctgaaaa aatattgtta gcaaaagaaa accacatcca acgtatacag      300
taaccagggt gtgaacatac tgaagccctg ttgctcagca gtttaatacc atttaaatat      360
ttctctcatc agagatttat tncaaataca tgaacttatt ataatttacc agaatacagt      420
gacatnattt ttnttttttt ttaaanaatt attatctatt atatgtaagt acccggtanc      480
tgtcttcaac acccagaana aggggtccaa tcttttacag aagggtgtgac cncatgtggn      540
gncgggaatt nannn                                                    555

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<210> 16

<211> 562

<212> DNA

<213> Mus musculus

<220>

<221> misc_feature

<222> (430)..(561)

<223> n can be any nucleotide

<400> 16

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ctacgaaatt gtacctgagt gacataaacc ggtaaagggtg tgttacttcg ctttttcatg      60
tttttttttt ctttttgttc tttggtctga taagaaaatg gacagttgtg gaaagtcagg      120
taatacagat cagtttccag ttcagaaccc taaatcacac ctacgtgagt gaggctgctg      180
cactgctttc cttgggttct tcggccggcc agacagcctt tctgctttgt aagtgacttc      240
attatagcca tcagctaata actccctcag catacactgg catctccaga ttacctgacg      300
gcagacatac ttgctctggc ttcaattaac atgctgtcaa gcatccctct cgacattcac      360
atggcaacac aaaaccatga atttctcttc atacaaccag gaatacacac tcataaaggg      420
aaagcggtan acctgatttt tattaaatat tatttccttc cttttccatg ccaagttcac      480

```


gtctctgtga tcttgacatg actggagttc ttcccattga atgtaactct ctgtacgata 300
 agtaatctcc ttcagtagcg cttgtggggg caccgagatt tacagaagcc gttgaagaca 360
 cgctactctg tctctgaata gtaatccgaa tgactgctgg cactagtcgg tcattcnggg 420
 agatacccac atttctccat gcctggctgg ggcaatctct gttgtaantg gtatccaata 480
 ttgggtctaca ttgttatggg taaaaaaatc tgtttgagaga atgctttgca tactgtnaat 540
 ttctgcctcn caaatnttgg aaggncgca 569

<210> 19

<211> 338

<212> DNA

<213> Mus musculus

<220>

<221> misc_feature

<222> (42)..(321)

<223> n can be any nucleotide

<400> 19
 gagacattct gaagggcagg aatgaggcgc tctccccagg gnagatgggtg gtgaggctgc 60
 tgagggggaa ggtgatatct ttccatcttc tcattacctg ccaatcacca aagaaggccc 120
 tcgagacatt ctggatggca gaagtggcat ttctgtggct aacttcgacc cgggcacctt 180
 tagcctgatg cgatgtgact tctgtggggc tggttttgat actcgggctg gcctctccag 240
 tcatgcccgg gccaccttc gtgactttgg catcaccaac ttgggggaact ccaccatctc 300
 accatcaaca tccttgcaaa naacttgctg ggccacct 338

<210> 20

<211> 483

<212> DNA

<213> Mus musculus

<220>

<221> misc_feature

<222> (318)..(481)

<223> n can be any nucleotide

<400> 20

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ggaggggtgta gcaaggcctg agaacatctt ccggggccgtg ggaggaggag aagcagttgg      60
tgagtggccc agaggactgc ctggtggtgg tggcaacttc ttggtcaaag gtgagatgtg      120
aagatcagag ggacttcggg cttctagtga gctgccagga cctccagtgc tcagcacctt      180
ggccagggct tttgggctag gacctggtgg gtggaggtgt cccctgggc tggattgggt      240
ccgtctcttc aggatctccc gaagtgtgtc gatgggtgag ccgttcacat accactcagt      300
tacacccatc tggcgcangt gggaacgtgc atggctanac aagcccttct tgttctcaaa      360
gaatcaccac anaactcaca gcggatatct cttgttggct ctgggcctga ancatctccg      420
tanattggcc canggtcctc accccantta ngcgggaaag gcatggtnaa aagtaacctt      480
ngc                                                                           483

```

<210> 21

<211> 51

<212> PRT

<213> SBD mutant

<400> 21

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Gln His Leu Gly Val Gly Met Glu Ala Pro Leu Leu Gly Phe Pro Thr
1           5           10           15
Met Asn Ser Asn Leu Ser Glu Val Gln Lys Val Leu Gln Ile Val Asp
           20           25           30
Asn Thr Val Ser Arg Gln Lys Met Asp Cys Lys Thr Glu Asp Ile Ser
           35           40           45
Lys Leu Lys
           50

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<210> 22

<211> 23

<212> DNA

<213> F3th12F (forward primer)

<400> 22

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cggcggcaga tacgcctcct gca      23

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<210> 23

<211> 29

<212> DNA

<213> th12 mousel (reverse primer)

<400> 23	
caggagcagt tgtgggtaga gccttcac	29
<210> 24	
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<213> th12	
<400> 24	
ctggactgag ctggacctgt ctctccagta c	31
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<212> DNA	
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gccatggtgt gaggagaagc	20
<210> 27	
<211> 19	
<212> DNA	
<213> Brachyury Binding Site	
<400> 27	
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